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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/099,632 06/18/98 INSLEY

T 53634USA8A

EXAMINER

QM02/0330

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ART UNIT	PAPER NUMBER
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3743

DATE MAILED:

03/30/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/099,632

Applicant(s)

Insley et al.

Examiner

Leonard R. Leo

Group Art Unit

3743



☒ Responsive to communication(s) filed on Jan 10, 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-30 is/are pending in the application.

Of the above, claim(s) 6-8, 11, and 25-30 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-5, 9, 10, and 12-24 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 1, 8, 11, 13

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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Claims 6-8, 11 and 25 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected species. Election was made without traverse in Paper No. 12. Regarding claim 11, the claim is read on Figure 6. Regarding claim 25, the claim is read on Figure 7.

Claims 26-30 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b) as being drawn to a non-elected invention. Election was made without traverse in Paper No. 7.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5, 9-10 and 12-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the recitation of an "aspect ratio" is indefinite, though fully disclosed in the specification as a ratio of the length over the hydraulic radius. In the art, an aspect ratio could be direct proportionality between any two of length, width and height.

Regarding claim 21, step (a) recites a single layer with a plurality of flow channels on a first major surface, while step (b) recites connecting heat exchange fluid. It is unclear how the flow channels are formed without a "cover layer". The claim appears to be indefinite.

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However, claim 22 is believed to render the claim definite, if the step is made between steps (a) and (b).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 21-23 are rejected under 35 U.S.C. § 102(b) as being anticipated by Rosman et al (Figure 2d, column 8, line 46).

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Phillips et al (Figures 1-3, column 2, lines 14-19).

Phillips et al discloses all the claimed limitations except the first layer being polymeric material

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It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

In re Leshin, 125 USPQ 416.

Claims 1 and 21-23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bae (Figures 2-3, column 5, lines 22-24 and column 6, lines 13-14).

Bae discloses all the claimed limitations except the first layer being polymeric material

It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

In re Leshin, 125 USPQ 416.

Claims 1-5 and 9-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Rosman et al in view of Bae.

Rosman et al discloses all the claimed limitations except a specific hydraulic radius and length to hydraulic radius aspect ratio.

Bae discloses a heat exchanger comprising a first layer 31b having a plurality of flow channels 30 and a cover layer 31a; wherein the channels have a hydraulic diameter of about 0.01 to 0.2 inch (where hydraulic radius is one fourth hydraulic diameter, 0.0025 to 0.05 inch or 63.5 to 127 μm) and an aspect ratio of about 5 to 600 for the purpose of achieving a desired heat exchange.

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Since Rosman et al and Bae are both from the same field of endeavor and/or analogous art, the purpose disclosed by Bae would have been recognized in the pertinent art of Rosman et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Rosman et al a hydraulic radius of about 63.5 to 127 μm and an aspect ratio of about 5 to 600 for the purpose of achieving a desired heat exchange as recognized by Bae.

Regarding claim 14, cross flow is a well known alternate of parallel flow.

Regarding claims 15-20, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Claims 14 and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Rosman et al in view of Bae as applied to claims 1-5 and 9-20 above, and further in view of Schubert et al.

The device of the combination of Rosman et al and Bae lacks perpendicular flow channels in adjacent layers.

Schubert et al discloses a heat exchanger comprising a plurality of layers having a plurality of flow channels 14d; wherein the flow channels in adjacent layers are perpendicular for the purpose of achieving a desired heat exchange.

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Since Rosman et al and Schubert et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Schubert et al would have been recognized in the pertinent art of Rosman et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Rosman et al perpendicular flow channels in adjacent layers for the purpose of achieving a desired heat exchange as recognized by Schubert et al.

Regarding claim 24, Figure 4 of Schubert et al shows an upper cover layer forming the flow channels 14b with a lower first layer is indirect heat relationship with the upper adjacent flow channels.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication should be directed to Leonard R. Leo whose telephone number is (703) 308-2611.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 3700 receptionist whose telephone number is (703) 308-0861.



LEONARD R. LEO
PRIMARY EXAMINER
ART UNIT 3743

March 27, 2000